Detection and treatment of psychiatric illness in a general medical ward: a modified cost-benefit analysis


Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
The study consisted of two phases. In the first phase, the use of a routine screening questionnaire for psychiatric disorder was considered in order to inform medical staff of potentially unrecognised mental disorders in patients admitted to the medical wards. In the second phase, the involvement of a psychiatrist in the care of those screened patients with potential psychiatric disorders was regarded as the intervention.

Type of intervention
Screening and treatment.

Economic study type
Cost-effectiveness analysis; cost-utility analysis.

Study population
Patients admitted to the medical wards, except for those who were already receiving psychiatric care, or those who were admitted to the hospital because of an episode of deliberate self-harm.

Setting
Hospital. The economic analysis was carried out in Manchester, UK.

Dates to which data relate
Dates for the effectiveness data were not reported. Some costing related to a study conducted between 1983 and 1984. The price year was not given.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
Costing was retrospectively performed on the same patient sample as that used in the effectiveness analysis.

Study sample
Power calculations were not used to determine the sample size. The study sample consisted of 1,117 eligible patients, who were selected out of a total of 1,235 patients. The response rate (those completing the screening procedure) was 88% (986 patients). A total of 201 patients with scores over the screening threshold for probable psychiatric illness were randomly assigned to either the "assessment by psychiatrist" group (n=68) with a mean (SD) age of 55 (17) years, the "physician informed" group (n=70) with a mean (SD) age of 50 (19) years, or to the control group (n=71) with a
mean (SD) age of 49 (19) years. Six physicians were involved in the study.

**Study design**
The study designs employed were a prospective cohort study for the first phase, and a randomised controlled trial for the second. The study was carried out at a single centre. The duration of the follow-up was 6 months. The number lost to follow-up was 30 (13% of surviving patients). It was reported that those lost to follow-up were comparable to those who completed the 6-month follow-up evaluation in terms of age, GHQ-28 (28-item version of the General Health Questionnaire), and recent contact with hospital services. The patients in the "assessment by psychiatrist" group were examined by a staff psychiatrist within 48 hours of admission to hospital; the psychiatrist's opinion and detailed recommendations were written in the patient's medical notes with the physician being free to arrange a follow-up visit with the psychiatrist; a checklist of symptoms of depression or anxiety was completed by the psychiatrist in addition to which the corresponding clinical psychiatric diagnosis and assessment of the type of link between the physical and psychiatric disorder were recorded. In the "physician informed" group, the informed physician (who was free to view a copy of the completed GHQ-28, on the interpretation of which he or she had already been briefed) was free to treat patients according to his or her assessment including referral to psychiatric services if necessary. The control group was treated as normal with no information being provided about the psychiatric profiles of the patients, although the option of referral to psychiatric services was also available for this group if required. The psychiatrist who interviewed patients at the 6-month follow-up was blinded to the status of the patients in the study.

**Analysis of effectiveness**
The principle used in the analysis of effectiveness was treatment completers only. The eligible patients for the first phase of the study (psychiatric screening) completed the 28-item version of the General Health Questionnaire (GHQ-28), and those who had scores over the screening threshold of 10/11 also completed the Nottingham Health Profile. They were then randomly assigned to one of three groups in the second phase of the study. The health outcome measures in the second phase of the study were mental health (using the Psychiatric Assessment Schedule), subjective health status (employing the Nottingham Health Profile), and quality of life (utilising the Rosser Index) assessed in an interview conducted by a psychiatrist retrospectively over the 6 months of follow-up. The prevalence rate of psychiatric disorder among the general medical in-patients in the study, the overall 6-month follow-up psychiatric morbidity of the study sample, the mortality rate, rates of referral for liaison-psychiatric assessment, and the percentage of psychiatric recommendations being implemented while in the ward and after discharge were also reported. The patient groups were found to be comparable in terms of age, gender, GHQ score, and number of recent out-patient appointments and admission, but not in terms of employment status.

**Effectiveness results**
The study showed a prevalence rate of 12% for psychiatric disorder among the study general medical in-patients. The overall 6-month follow-up psychiatric morbidity of the study sample was 56%. The mortality rate was 16% at 6 months. Rates of referral for liaison-psychiatric assessment in the "physician informed" and control groups were about 16%. The rate of psychiatric recommendations for psychotropic drugs being implemented while on the ward were 91% and after discharge were 18% (resulting in patients not receiving a therapeutic dosage for an adequate duration of time).

In terms of mental health status at 6-month follow-up, the definite cases of disorder were:

- 50% (95% CI: 35-65) for the "assessment by psychiatrist" group, 68% (95% CI: 53-81) for the "physician informed" group, and 52% (95% CI: 38-66) for the control group, (NS);

- threshold cases of disorder were 70% (95% CI: 54-82) for the "assessment by psychiatrist" group, 72% (95% CI: 58-84) for the "physician informed" group, and 61% (95% CI: 47-74) for the control group, (NS);

- the mean (SD) symptom score was 14.8 (11.6) for the "assessment by psychiatrist" group, 14.5 (10) for the "physician informed" group, and 14 (12.2) for the control group, (NS);

- mean (SD) Index of Definition was 4.6 (1.6) for the "assessment by psychiatrist" group, 4.7 (1.7) for the "physician informed" group, and 4.2 (1.9) for the control group, (NS).
As a result, the study groups were found to have a comparable psychiatric outlook at follow-up. In terms of subjective health status at follow-up, the study groups were comparable both in terms of perceived health problems and in health problems relating to daily areas of living. Median Rosser Index was 0.935 (95% CI: 0.9-0.956) for the “assessment by psychiatrist” group, 0.942 (95% CI: 0.935-0.956) for the "physician informed" group, and 0.935 (95% CI: 0.9-0.956) for the control group, (NS).

Clinical conclusions
The results of this study have not shown benefits from routine screening for psychiatric disorder among general medical in-patients: neither of the two levels of intervention can be recommended for routine use.

Measure of benefits used in the economic analysis
The implicit measure of benefit used in the study was quality adjusted life year (QALY) computed based on retrospective series of Rosser indices collected at follow-up.

Direct costs
Costs were not discounted due to the 6-month follow-up period of the study. Quantities were not reported separately from the costs. Cost items were reported separately. Cost analysis covered the costs of psychiatry and local authority costs (including GHQ screening, staff psychiatrist, psychiatric consultations, psychotropic drugs, psychiatric outpatient appointments, psychiatric inpatients, social work, and local authority), health service costs (including in-patient care, out-patient care, primary care), patient costs, and carers’ time. The perspective adopted in the cost analysis was that of the National Health Service (NHS), the patients, and their families or friends. The sources of resource use data during the 6-month follow-up period were medical case notes, paramedical records from all hospitals attended by the patient, the social workers’ records, interview with general practitioners or their case notes, and interview with patients’ closest families or friends. The sources of cost data were local and national references or in the case of unavailability, estimation based on each cost component. The date of the price data was not explicitly specified (except for local costing in the study hospital, which was from 1983 to 1984).

Statistical analysis of costs
Kruskal-Wallis one-way analysis of variance test was used to analyse the costs (median values were used to represent average costs). The Confidence Interval Analysis Computer Program was used to estimate the median differences in costs and their confidence intervals.

Indirect Costs
Indirect costs were not discounted due to the 6-month follow-up period of the study. Quantities were not reported separately from the costs. Indirect cost items were reported separately. Indirect cost analysis covered the costs of time spent caring for the patient by family or friends and productivity loss due to illness for employed patients. The perspective adopted in the cost analysis was that of the patients and their family and friends. The valuation of the time spent caring for the patient by family or friends was based on similar paid work (e.g., nursing auxiliary or local authority care assistant). The valuation of productivity loss was based on the multiplication of time missed from paid employment by the gross wage. The date of the price data was not explicitly specified.

Currency
UK pounds sterling ( ).

Sensitivity analysis
Not conducted.
Estimated benefits used in the economic analysis
The median QALY was 0.872 (95% CI: 0.746-0.928) for the "assessment by psychiatrist" group, 0.922 (95% CI: 0.888-0.952) for the "physician informed" group, and 0.922 (95% CI: 0.878- 0.948) for the control group, (NS).

Cost results
The total costs for all patients during the 6-month follow-up period were:

3,679 for the "assessment by psychiatrist" group, 2,137 for the "physician informed" group, and 3,015 for the control group (NS at 10% level).

The median cost savings, relative to the control group, were:

-804 (95% CI: -2145 - +376) for the "assessment by psychiatrist" group; and +412 (95% CI: -555 - +1998) for the "physician informed" group.

The grand total cost for no paid employment patients were:

2,484 for the "assessment by psychiatrist" group, 2,898 for the "physician informed" group, and 3,375 for the control group.

Synthesis of costs and benefits
Costs and benefits were not combined since the study groups were not significantly different in terms of either the benefit or the cost measure.

Authors' conclusions
The authors concluded that they had not been able to show that routine screening for psychiatric disorder produces any benefit, either in better outcome for patients or reduced costs for the NHS.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparators is clear (they represent the current practice in the context in question).

Validity of estimate of measure of benefit
The internal validity of the effectiveness and benefit measures is likely to be high due to the prospective, and randomised designs used in the first and second stage of the study. However, differences in employment status among the groups and the reported breakdown in psychiatric care on discharge are two factors that limit the strength of the analysis.

Validity of estimate of costs
Quantities were not reported separately from the costs, although adequate details of methods of cost estimation were given. The retrospective nature of the costing might have had adverse effects on its validity. The authors included indirect cost analysis, which is a strong point of the study in adopting what amounted to a societal perspective.

Other issues
As acknowledged by the authors, the study results should be interpreted cautiously due to large variation in costs and corresponding low study power. The issue of generalisability to other settings or countries was not addressed. Appropriate comparisons were made with other studies.
Implications of the study
The authors state that further research should consider examining a more homogeneous group in terms of costs of care; screen only for disorders likely to respond to a specific treatment; and ensure that treatment recommendations are carried out.

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Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
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